(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



: TO THE BOOK OF THE STATE OF T

(43) International Publication Date 14 April 2005 (14.04.2005)

PCT

(10) International Publication Number WO 2005/032383 A1

(51) International Patent Classification7:

A61B 17/17

(21) International Application Number:

PCT/US2004/031093

(22) International Filing Date:

22 September 2004 (22.09.2004)

(25) Filing Language:

(30) Priority Data:

10/674,036

English

(26) Publication Language:

English

29 September 2003 (29.09,2003) U

- (71) Applicant (for all designated States except US): SDGI HOLDINGS, INC. [US/US]; 300 Delaware Avenue Suite 508, Wilmington, DE 19801 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): JUSTIS, Jeff, R. [US/US]; 2034 West Almadale Court, Collierville, TN 38017 (US).
- (74) Agents: THOMPSON, John, F. et al.; MS LC340, 710 Medtronic Parkway, Minneapolis, MN 55432 (US).

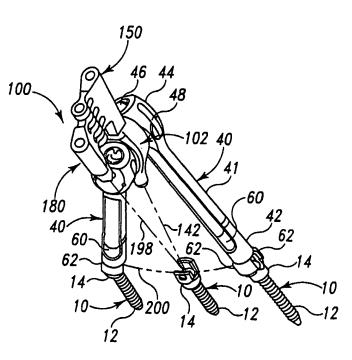
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,

[Continued on next page]

(54) Title: GUIDE TO ALIGN BONE ANCHORS



(57) Abstract: Instruments and methods include a guide instrument (100, 220) mountable to at least one anchor extension (40) to guide the positioning of an anchor (10) in a bony segment. The guide instrument (100, 220) facilitates aligning the anchor (10) with one or more other anchors (10) already engaged to the bony segment. The anchors (10) can then be engaged with a connecting element (90) extending therebetween. The guide instrument (100, 220) facilitates multi-level fixation of bony segments with bone anchors (10) and one or more connecting elements (90) in a minimally invasive surgical approach.

WO 2005/032383 A1



MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

 as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Interna Application No

	INTERNATIONAL SEARCH F	REPORT	PCT, USZ 2004/031093		
A. CLASSI IPC 7	FICATION OF SUBJECT MATTER A61B17/17				
	o international Patent Classification (IPC) or to both national classi	fication and IPC			
	SEARCHED commentation searched (classification system followed by classific $A61B$	ation symbols)			
Documenta	lion searched other than minimum documentation to the extent tha	il such documents are incl	luded in the fields searc	hed	
	ata base consulted during the international search (name of data ternal, PAJ	base and, where practica	i, search terms used)		
C. DOCUM	ENTS CONSIDERED TO BE RELEVANT		····		
Category *	Citation of document, with indication, where appropriate, of the	relevant passages		Relevant to claim No.	
х	US 4 570 624 A (WU K.K.) 18 February 1986 (1986-02-18)			1,7,15, 17,23, 24,27, 28,33,34	
	the whole document			20,33,34	
х	PATENT ABSTRACTS OF JAPAN vol. 018, no. 381 (C-1226), 18 July 1994 (1994-07-18) -& JP 06 105852 A (NAGANO KEIKI LTD), 19 April 1994 (1994-04-19 abstract; figure 2			1,7,15, 17,23, 24,27, 28,33,34	
A	US 6 530 929 B1 (JUSTIS J.R. ET 11 March 2003 (2003-03-11) cited in the application figures 1,4,8,21,23,24	AL)		1-6	
		,			
X Furt	her documents are listed in the continuation of box C.	X Patent family	members are listed in ar	nnex.	
	tegories of cited documents :		blished after the internal		
A document defining the general state of the art which is not considered to be of particular relevance		or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to			
L docume which citation "O* docume other	ent which may throw doubts on priority claim(s) or is cited to establish the publication date of another no rother special reason (as specified) ent referring to an oral disclosure, use, exhibition or	involve an inventi "Y" document of partic cannot be consid- document is com	we step when the docum war relevance; the claim ered to involve an invent bined with one or more o bination being obvious to	nent is taken alone ned invention live step when the other such docu—	
later th	nan the priority date claimed		of the same patent fam		
	actual completion of the international search 2 January 2005	19/01/2	the international search	i apali	
	Name and mailing address of the ISA				
	European Patent Office, P.B. 5818 Patentlaan 2 NL ~ 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo ni, Fax: (+31-70) 340-3016	Nice, F	•		

INTERNATIONAL SEARCH REPORT

Interns Application No
PCT, 002/004/031093

C.(Continue	C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT					
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.				
A	EP 0 858 780 A (ORTHOFIX) 19 August 1998 (1998-08-19) 	1,17,27				

tional application No. rCT/US2004/031093

INTERNATIONAL SEARCH REPORT

Box II Observations where certain claims were found unsearchable (Continuation of Item 2 of first sheet)
This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:
1. X Claims Nos.: 35-45 because they relate to subject matter not required to be searched by this Authority, namely: Rule 39.1(1v) PCT - Method for treatment of the human or animal body by
2. Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful international Search can be carried out, specifically:
Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).
Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)
This International Searching Authority found multiple inventions in this international application, as follows:
As all required additional search fees were timely paid by the applicant, this international Search Report covers all searchable claims.
As all eearchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search lees were timely paid by the applicant. Consequently, this international Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
Remark on Protest The additional search fees were accompanied by the applicant's protest. No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Intern pplication No
PCT/U32J04/031093

Patent document cited in search repo	rt	Publication date		Patent family member(s)	 .	Publication date
US 4570624	Α	18-02-1986	NONE			<u> </u>
JP 06105852	Α	19-04-1994	JP	3382643	B2	04-03-2003
US 6530929	B1	11-03-2003	AU	8011900	 A	30-04-2001
			BR	0014936	Α	18-06-2002
			CA	2387733	A1	26-04-2001
			EP	1221901		17-07-2002
			JP	2003511190	T	25-03-2003
			WO	0128436	A1	26-04-2001
			US	2002161368	A1	31-10-2002
			US	2003060826	A1	27-03-2003
			US	2003229347	A1	11-12-2003
			ZA	200203097	A	18-07-2003
EP 0858780	Α	19-08-1998	ΙΤ	VR970011	A1	13-08-1998
			ΑT	225632	T	15-10-2002
			CA	2229362	A1	13-08-1998
			CN	1191104	A ,B	26-08-1998
			DE	69716230		14-11-2002
			DE	69716230	T2	18-06-2003
			ΕP	0858780	A2	19-08-1998
			ES	2184021		01-04-2003
			JP	10225465	Α	25-08-1998
			PT	858780	Ť	31-12-2002
			TR	9800223	A2	21-06-1999
			US	6102911	Α	15-08-2000
			ZA	9711413	Α	24-06-1998